

ABSTRACT

Formation of a protective coating having oxidation resistance on a portion to be processed of a component main body by employing an electrode composed of a molded body molded from mixed powders of one or more of an aluminum powder, an aluminum alloy powder, a chromium powder and a chromium alloy powder, or the molded body processed with a heat treatment, generating a pulsing electric discharge between the portion to be processed of the component main body and the electrode in an electrically insulating liquid or gas so that an electrode material of the electrode is adhered to the portion to be processed of the component main body by energy of the electric discharges, and further keeping the portion to be processed of the component main body and the electrode material adhered thereto in high temperatures so that the electrode material adhered thereto diffuses into a base material of the component main body.